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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of

JOHN CORRIE et al.

Application No.

09/936,975

Attorney Docket No.

0380-P02671US0

Filed:

December 27, 2001

For:

1-ACYL-7-NITROINDOLINE DERIVATIVES,
THEIR PREPARATION AND THEIR USE AS
PHOTOCLEAVABLE PRECURSORS

Examiner:

Not Yet Assigned

Group Art Unit:

1635

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CERTIFICATE OF MAILING UNDER 37 C.F.R. § 1.8(a)

I hereby certify that this Correspondence is being deposited on the date identified below with the United States Postal Service as first-class mail in an envelope properly addressed to ASSISTANT COMMISSIONER FOR PATENTS, Washington, D.C. 20231.

21 June 2002

Date of Certificate

Patrick J. Hagan

Patrick J. Hagan

Assistant Commissioner for Patents
Washington, D.C. 20231

**INFORMATION DISCLOSURE STATEMENT
UNDER 37 C.F.R. § 1.97**

In compliance with the duty of disclosure set forth in 37 C.F.R. § 1.56, Applicants are submitting herewith a Form PTO-1449 and a copy of the references listed thereon. This Information Disclosure Statement is being filed more than three months after the filing date, but before receipt of the first Official Action on the merits. Thus, it is believed by the undersigned attorney that no fee is required under 37 C.F.R. §1.97(b).

In the event that a fee is required, the Commissioner is authorized to charge Deposit Account No. 04-1406 of the undersigned attorneys. A duplicate copy of this sheet is enclosed.

In the opinion of the undersigned, the references submitted herewith are the

most pertinent of which the undersigned is aware. However, no representation is made or intended that more pertinent references do not exist.

This submission is not an admission that the references listed on the attached Form PTO-1449 constitute prior art against the claims of this application.

The Examiner is respectfully requested to confirm receipt and consideration of the cited references by initialing and returning a copy of the attached Form PTO-1449 in accordance with MPEP §609.

Early and favorable consideration of this application is respectfully requested.

Respectfully submitted,

DANN, DORFMAN, HERRELL & SKILLMAN
A Professional Corporation
Attorneys for Applicant(s)

By Patrick J. Hagan
Patrick J. Hagan
PTO Registration No. 27,643

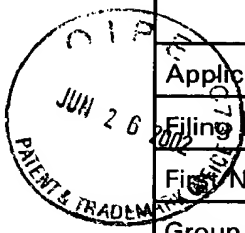
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Enclosures - Form PTO-1449

Copies of references listed on PTO - 1449

INFORMATION DISCLOSURE STATEMENT



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First Named Inventor: JOHN CORRIE et al.

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SHEET 2 OF 4

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✓ C8 ✓	KAPLAN, J.H., "Photochemical Manipulation of Divalent Cation Levels"; Annu. Rev. Physiol. 52: 897-914 (1990)
C9 ✓	PAPAGEORGIOU, G. et al., "Synthetic and Photochemical Studies of <i>N</i> -Arenesulfonyl Amino Acids"; Tetrahedron 55: 237-254 (1999)
C10 ✓	GIVENS, R.S. et al., "New Photoactivated Protecting Groups. 7. <i>p</i> -Hydroxyphenacyl: A Phototrigger for Excitatory Amino Acids and Peptides"; J. Am. Chem. Soc. 119: 8369-8370 (1997)
✓ C11 ✓	FURUTA, T. et al., "Brominated 7-hydroxycoumarin-4-ylmethyls: Photolabile protecting groups with biologically useful cross-sections for two photon photolysis"; Proc. Natl. Acad. Sci. USA 96: 1193-1200 (1999)
✓ C12 ✓	PAPAGEORGIOU, G. et al., "Synthesis and Properties of Carbamoyl Derivatives of Photolabile Benzoin"; Tetrahedron 53(11): 3917-3932 (1997)
✓ C13 ✓	AMIT, B. et al., "Light-Sensitive Amides. The Photosolvolysis of Substituted 1-Acyl-7-nitroindolines"; J. Am. Chem. Soc. 98: 843-844 (1976)
✓ C14 ✓	McKILLOP, A. et al., "Thallium in Organic Synthesis. XXVII. A Simple One-Step Conversion of Acetophenones into Methyl Phenylacetates Using Thallium(III) Nitrate (TTN)"; J. Am. Chem. Soc. 93: 4919-4920 (1971)
✓ C15 ✓	MORTENSEN, M.B. et al., "Improved Preparation of Some Nitroindolines"; Org. Prep. Proced. Int. (OPPI Briefs) 28(1): 123-125 (1996)
✓ C16 ✓	CARPINO, L.A. et al., "Peptide Synthesis via Amino Acid Halides"; Acc. Chem. Res. 29(6): 268-274 (1996)
✓ C17 ✓	GALL, W.G. et al., "Synthesis of 7-Substituted Indoline Derivatives"; J. Org. Chem. 20: 1538-1544 (1955)
✓ C18 ✓	ZUMAN, P. et al., "Addition, Reduction, and Oxidation Reactions of Nitrosobenzene"; Chem. Rev., 94: 1621-1641 (1994)
✓ C19 ✓	BARTH, A. et al., "Time-Resolved Infrared Spectroscopy of Intermediates and Products from Photolysis of 1-(2-Nitrophenyl)ethyl Phosphates: Reaction of the 2-Nitrosoacetophenone Byproduct with Thiols"; J. Am. Chem. Soc., 119: 4149-4159 (1997)
✓ C20 ✓	WAN, P. et al., "Photoredox chemistry of nitrobenzyl alcohols in aqueous solution. Acid and base catalysis of reaction"; Can. J. Chem., 64: 2076-2086 (1986)
✓ C21 ✓	WAN, P. et al. "Structure and Mechanism in the Photo-Retro-Aldol Type Reactions of Nitrobenzyl Derivatives. Photochemical Heterolytic Cleavage of C-C Bonds"; J. Am. Chem. Soc., 110(13): 4336-4345 (1988)

EXAMINER'S SIGNATURE		DATE CONSIDERED	
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EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP §609. Draw a line through citation if citation not in conformance and reference not considered. Include a copy of this form with next communication to applicant.

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Group Art Unit: 1635

Examiner Name: Not Yet Assigned

Attorney Docket Number: 0380-P02671US0

SHEET 1 OF 4

UNITED STATES PATENT DOCUMENTS

EXAMINER'S INITIALS	CITE NO.	PATENT NUMBER	ISSUE DATE MM-DD-YYYY	FIRST NAMED INVENTOR
	A1	4,210,590	07/01/1980	Bruce E. Maryanoff et al.
	A2	6,268,389 B1	07/31/2001	Franz Esser et al.

FOREIGN PATENT DOCUMENTS

EXAMINER'S INITIALS	CITE NO.	DOCUMENT NUMBER	COUNTRY OR REGION	DATE OF PUBLICATION MM-DD-YYYY	FIRST NAMED INVENTOR OR APPLICANT
	B1	WO 86/00527 ✓	WO	01/30/1986	DANA-FARBER CANCER INSTITUTE, INC.

OTHER PRIOR ART - NON-PATENT DOCUMENTS

EXAMINER'S INITIALS	CITE NO.	Include name of the author (in Capital Letters), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published
	C1 ✓	GOISSIS, G. et al., "Synthesis of Protected Peptide Acids and Esters by Photosolvolysis of 1-peptidyl-5-bromo-7-nitroindolines"; Proc. Am. Peptide Symp., 5: 559-61 (1977)
	C2 3	Yeda Research and Development Co., Ltd., "Reversible blocking of acyl groups during organic synthesis using 7-nitroindoline derivatives as blocking agents"; Chem. Abstracts, Ab. No. 181004x, 92(21): 637 (1980)
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	C4 ✓	ADAMS, S.R. et al., "Biologically Useful Chelators That Take Up Ca ²⁺ upon Illumination"; J. Am. Chem. Soc. 111: 7957-7968 (1989)
	C5 ✓	PAPAGEORGIOU, G. et al., "Photorelease of Carboxylic Acids from 1-Acyl-7-nitroindolines in Aqueous Solution: Rapid and Efficient Photorelease of L-Glutamate"; J. Am. Chem. Soc. 121: 6503-6504 (1999)
	C6 ✓	CORRIE, J.E.T. et al., "Caged Nucleotides and Neurotransmitters"; Bioorganic Photochemistry, Volume 2: Biological Applications of Photochemical Switches; Morrison, H. (Ed.), Chapter 5: 243-305 (John Wiley & Sons, 1993)
	C7 ✓	ADAMS, S.R. et al., "Controlling Cell Chemistry with Caged Compounds"; Annu. Rev. Physiol. 55: 755-784 (1993)

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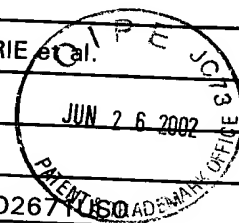
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Group Art Unit: 1635

Examiner Name: Not Yet Assigned

Attorney Docket Number: 0380-P02671USO

SHEET 4 OF 4



C36 ✓	KRUSE, L.I., "Synthesis of 4-Substituted Indoles from <i>o</i> -Nitrotoluenes"; Heterocycles, 16(7): 1119-1124 (1981)
C37 ✓	CORRIE, J.E.T. et al., "Synthesis and evaluation of photolabile sulfonamides as potential reagents for rapid photorelease of neuroactive amines"; J. Chem. Soc., Perkin Trans. I, 1583-1592 (1996)
C38	PAPAGEORGIOU, G. et al., "Effects of Aromatic Substituents on the Photocleavage of 1-Acyl-7-nitroindolines"; Tetrahedron 56: 8197-8205 (2000)

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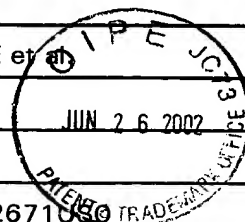
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SHEET 3 OF 4



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C23	✓	AMIT, B. et al., "Light-sensitive Amides. Photocleavage of N-Acyl-1,2,3,4-tetrahydro-8-nitroquinolines to give Free Carboxylic Acids"; J. Chem. Soc., Perkin Tran. I, 57-63 (1976)
C24	✓	KAPLAN, J.H. et al., "Rapid Photolytic Release of Adenosine 5'-Triphosphate from a Protected Analogue: Utilization by the Na:K Pump of Human Red Blood Cell Ghosts"; Biochemistry, 17(10): 1929-1935 (1978)
C25	✓	HAMILL, O.P. et al., "Improved Patch-Clamp Techniques for High-Resolution Current Recording from Cells and Cell-Free Membrane Patches"; Pflügers Arch., 391: 85-100 (1981)
C26	✓	RAPP, G. et al., "A low cost high intensity flash device for photolysis experiments"; Pflügers Arch., 411: 200-203 (1988)
C27	✓	KHODAKHAH, K. et al., "Fast activation and inactivation of inositol trisphosphate-evoked Ca ²⁺ release in rat cerebellar Purkinje neurones"; J. Physiol., 487.2: 343-358 (1995)
C28	✓	CRABB, T.A. et al., "Microbiological Transformations, Part 6. Microbiological Transformations of Acyl Derivatives of Indoline, 1,2,3,4-Tetrahydroquinoline, 1,2,3,4-Tetrahydroisoquinoline and 2,3,4,5-Tetrahydro-1H-1-benzazepine with the Fungus <i>Cunninghamella elegans</i> "; J. Chem. Soc. Perkin Trans. I, 1381-1385 (1985)
C29	✓	MONRO, A.M. et al., "The Conformation of the Amide Group in N-Acyl-indolines and -1,2,3,4-tetrahydroquinolines"; J. Chem. Soc. (B), 1227-1230 (1971)
C30	✓	TERENTEV, A.P. et al., "Introduction of Substituents in the Benzene Ring of Indole"; J. Gen. Chem. USSR, 29: 2835-2841 (1959)
C31	✓	CORRIE, J.E.T. et al. "Synthesis and Absolute Stereochemistry of the Two Diastereoisomers of P ³ -1-(2-Nitrophenyl)ethyl Adenosine Triphosphate ('Caged' ATP)"; J. Chem. Soc. Perkin Trans. I, 1015-1019 (1992)
C32	✓	KAWASE, M. et al., "Silica Gel Assisted Reductive Cyclization of 2-Nitro- α -piperidinostyrenes, Derived from 2-Nitrotoluenes, to Indoles"; J. Heterocyclic Chem., 24: 1499-1501 (1987)
C33	✓	BUCHANAN, J.G. et al., "Synthesis of the Indole Nucleoside Antibiotics Neosidomycin and SF-2140"; J. Chem. Soc. Perkin Trans. I, 1417-1426 (1994)
C34	✓	GANGJEE, A. et al., "Synthesis and Biological Evaluation of Nonclassical 2,4-Diamino-5-methylpyrido[2,3-d]pyrimidines with Novel Side Chain Substituents as Potential Inhibitors of Dihydrofolate Reductases"; J. Med. Chem., 40: 479-485 (1997)
C35	✓	WIELAND, T. et al., "Synthese einiger Methoxy-oxindole und -indoline"; Chem. Ber., 96: 253-259 (1963) [English translation of Abstract attached]

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